Trend Study 8B-8-00

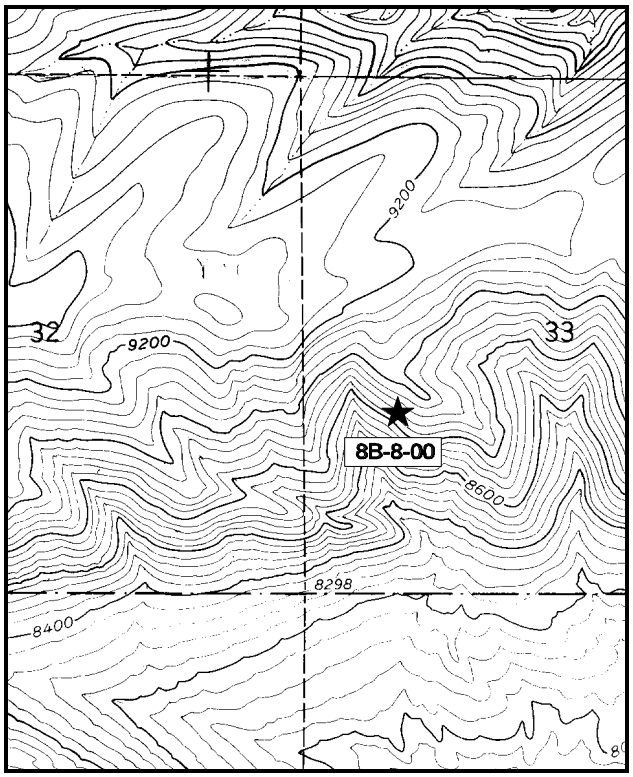
Study site name: Phil Pico Mountain . Range type: True Mountain Mahogany .

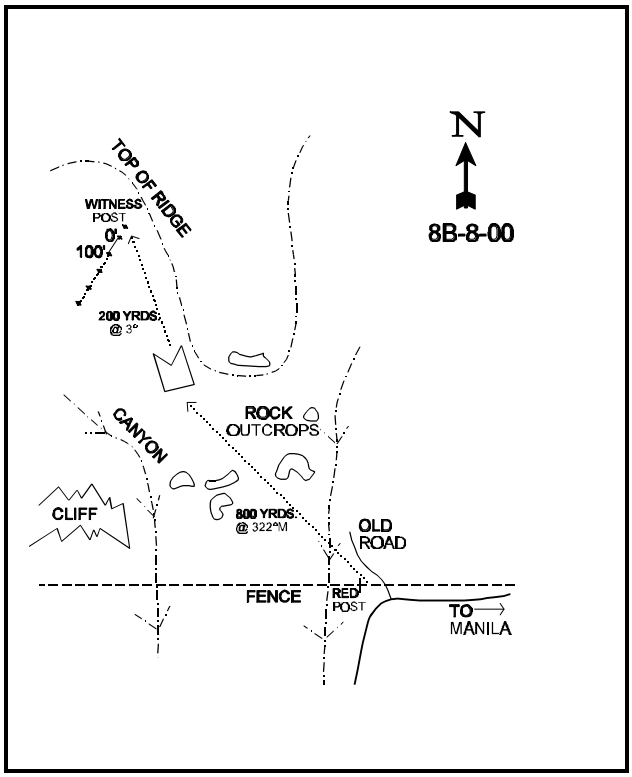
Compass bearing: frequency baseline 215°M .

First frame placement on frequency belts 5 feet. Frequency belt placement; line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft.), line 4 (71ft).

LOCATION DESCRIPTION

West of Manila, on Highway U-43 1.9 miles from the Wyoming-Utah stateline, turn south off the highway. Follow Rt. 166 for 3.6 miles to an intersection. Turn to the right and go 1.6 miles to another fork. Bear right before crossing the creek and go 0.9 miles on a fairly rough road to the FS boundary fence. Continue 0.8 miles west along the fence. Stop where the road turns left away from the fence by a red post. The study is located on the slope below the ridge to the northwest. From the red witness post along the fence, hike about 1/4 mile NNW (322°M) up across the slope to a large square rock outcrop. Continue hiking about 200 yards directly north to the study site. The 0-foot baseline stake is tagged with browse tag #9080.





Map Name: Phil Pico Mountain Diagrammatic Sketch

Township 3N , Range 18E , Section 33 UTM 4533503 N, 591689 E

DISCUSSION

Trend Study No. 8B-8 (9-18)

The Phil Pico Mountain trend study site is located on the south side of Phil Pico Mountain which is steep and rocky and covered mostly with mountain brush. There are scattered clumps of aspen and conifer in the protected drainages and an open sagebrush-grass type on the upper slopes and ridgetops. The site is located just below a narrow windswept ridge. It samples a steep (65% to 70%) southwest facing slope dominated by true mountain mahogany at an elevation of 8,800 feet. These south slopes are used mostly by wintering elk and to a lesser extent by deer. While cattle graze this state-owned land in summer, they utilize mainly the valley bottoms and more gentle slopes. Pellet group data taken along the study site baseline in 2000 estimate 40 elk and 7 deer days use/acre (99 edu/ha and 17 ddu/ha). Most of the pellet groups appear to be from fall use. Elk appear to have used the area more heavily in 1995 since quadrat frequency of elk pellet groups was twice as high compared to 2000. The decline in use is likely due to several mild winters since 1995.

Considering the harshness of the site on the dry, steep, rocky slope, there is a surprisingly high amount of vegetative cover (39.5% in 1995 and 57% in 2000). Sandstone and limestone rock are very common on the surface, making the slope loose and talus-like in places. Outcrops of old conglomerate rock are scattered throughout the hillside. The soil is relatively deep for this type of site with an effective rooting depth estimated at just over 12 inches. Texture is a sandy loam with a neutral pH. Soil penetrometer readings suggest that the majority of the rock is concentrated 4 to 8 inches below the surface. With the steep, talus slope, some erosion is expected. There is definite down slope soil movement, especially along game trails. Soil is also pedestalled on the uphill side of shrubs and bunch grasses but soil erosion does not appear to be serious. Herbaceous vegetative cover is critical for minimizing soil movement on this type of site.

True mountain mahogany provides the majority of the browse cover and the bulk of the available forage. There was an estimated density of 4,132 plants/acre in 1988. Eighteen percent were decadent plants. Some of the young and mature plants showed signs of insect damage. Use was heavy on 73% of the population. Seed production was moderate and leader growth about 4 to 5 inches in length. There was a fair amount of reproduction evident, with young and seedling age classes comprising 37% and 5% of the population respectively. During the 1995 reading, there were an estimated 3,120 plants/acre, 79% mature and only 2% decadent. Vigor was mostly good with 6% of the population displaying reduced vigor due to insect damage. During the 2000 reading, density remained identical to 1995 estimates. Use continues to be mostly moderate to heavy. Percent decadence increased from 3% to 15%. Due to the dry conditions, annual leader growth was relatively low averaging only 3.3 inches. Some plants displayed yellowing leaves and 33% of the decadent mahogany were classified as dying. No seedlings were found in 2000, but young plants account for 13% of the population which appear to be abundant enough to maintain the population. On average, the percentage of young plants within the population is 23%, where on average the number of dead plants in the population is less than 1%.

Mountain big sagebrush occurs across the slope offers additional and more nutritional winter forage. It has displayed mostly light to moderate use since 1988. Mountain big sagebrush is also showing the effects of the prolonged drought. Percent decadence is now (‘00) moderately low, but 70% of the decadent plants were classified as dying. No seedlings were encountered in 2000 yet young plants accounted for 13% of the population and appear to be abundant enough to maintain the population. On average, the percentage of young within the population is 13%, while the average percent dead is less the 12%. Other browse include: serviceberry, fringed sagebrush, black sagebrush, winterfat, mountain low rabbitbrush and slenderbush eriogonum.

The herbaceous understory is surprisingly abundant with grasses producing almost 17% cover in 1995, increasing to 27% by 2000. Forbs are diverse but provide only about 3 to 4% cover on this harsh site. By far the most abundant grass consists of bluebunch wheatgrass which exhibits considerable vegetative production. Other common grasses include Indian ricegrass and the annual cheatgrass. Forbs are represented by a variety of species, but only a few including cryptantha, hoary aster and Hoods phlox are abundant.

1988 APPARENT TREND ASSESSMENT

The amount of total rock cover reflects the rocky nature of the site. Rock cover is 19% and pavement cover is 24%. Together, they contribute to 43% of the surface cover, which is considered very high. Basal vegetative cover is good at 11%, but litter cover is unsatisfactory at only 38%. Trend for browse appears stable with adequate numbers of seedlings and young for mountain big sagebrush and true mountain mahogany. The composition of the herbaceous understory is good and dominated by native grasses. Forbs are diverse but not as numerous.

1995 TREND ASSESSMENT

Percent bare ground has declined from 8% to only 2%. Soil movement down slope is unavoidable but not severe due to the abundance of well dispersed vegetation and litter cover. Trend for soil is slightly up. Trend for the key species, true mountain mahogany which makes up 81% of the total browse cover, is slightly up. The number of mature plants increased, while the number of decadent shrubs declined from 18% to only 3%. The proportion of shrubs displaying heavy use also declined from 73% in 1988 to 54% in 1995. The number of seedlings and young plants declined, but they still appear adequate to maintain the population. Trend for the secondary browse species, mountain big sagebrush, is slightly down, but only contributes to 7% of the total browse cover. The population has declined significantly with 55% of the decadent sagebrush classified as dying, indicating a further decline in population density in the future. However, there are not very many dead plants within the population, indicating that most of the decrease is because of the much larger sample now used to determine the density of shrubs giving a more accurate estimate of its population. This would still be considered a marginal site for mountain big sagebrush. The shallow, rocky soils coupled with drought conditions have further stressed the population. Since mountain mahogany provides 81% of the browse cover and the bulk of the forage on the site, overall browse trend is considered slightly up. It should be noted that with the increased sample size and much better sampling distribution, the population estimates for shrubs are much closer to reality. Trend for the herbaceous understory is down. Nested frequency of nearly all grass species have declined significantly. Sum of nested frequency of perennial forbs have also declined.

TREND ASSESSMENT
soil - slightly up (4)
browse - slightly up (4)
herbaceous understory - down (1)

2000 TREND ASSESSMENT

Trend for soil appears fairly stable. Percent cover of bare ground has increased slightly, while litter cover has declined slightly. However, vegetation cover increased and herbaceous cover rose by 64%. In addition, the ratio of protective ground cover (vegetation, litter and cryptogams) to bare ground increased slightly. There is still unavoidable down slope soil movement but it is not severe. Trend for the key browse species, true mountain mahogany, is stable. Population density has remained stable and use is similar to 1995 estimates. Vigor is normal on most plants and percent decadence has risen but it is still low at 15%. Due to the dry conditions of 2000, some shrubs are displaying yellowing leaves and 33% of the decadent mahogany were classified as dying. No seedlings were encountered but young plants account for 13% of the population. Mountain big sagebrush

also appears stable but many plants are showing the effects of drought. Trend for the herbaceous understory is stable with similar sum of nested frequency values for perennial grasses and forbs.

TREND ASSESSMENT
soil - stable (3)
browse - stable (3)
herbaceous understory - stable (3)

HERBACEOUS TRENDS --
Herd unit 08B, Study no: 8

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover %	
		'88	'95	'00	'88	'95	'00	'95	'00
G	Agropyron spicatum	297	287	309	97	96	97	10.99	19.74
G	Bromus tectorum (a)	-	b152	a53	-	55	22	2.53	.18
G	Carex spp.	b36	b33	a9	17	11	5	.50	.39
G	Koeleria cristata	b16	ab7	a4	9	5	1	.08	.03
G	Leucopoa kingii	-	2	4	-	1	1	.03	.03
G	Oryzopsis hymenoides	115	85	104	57	39	38	2.16	6.56
G	Poa fendleriana	-	-	2	-	-	2	-	.03
G	Poa secunda	b45	a23	a19	19	11	7	.18	.18
Total for Annual Grasses		0	152	53	0	55	22	2.53	0.18
Total for Perennial Grasses		509	437	451	199	163	151	13.95	26.98
Total for Grasses		509	589	504	199	218	173	16.49	27.16
F	Arabis spp.	a-	b7	b6	-	4	3	.02	.01
F	Aster chilensis	b25	a-	a2	12	-	1	-	.00
F	Astragalus convallarius	-	7	8	-	3	3	.21	.21
F	Astragalus spp.	8	4	3	5	3	2	.06	.15
F	Balsamorhiza hookeri	1	-	-	1	-	-	-	-
F	Castilleja linariaefolia	a-	a-	b3	-	-	3	-	.04
F	Camelina microcarpa (a)	-	a-	b27	-	-	15	-	.10
F	Castilleja spp.	b26	a-	a-	12	-	-	-	-
F	Chaenactis douglasii	28	24	19	16	10	12	.10	.14
F	Chenopodium leptophyllum (a)	-	b19	a3	-	11	2	.05	.01
F	Cirsium spp.	12	2	4	6	2	1	.06	.03
F	Comandra pallida	6	-	-	2	-	-	-	-
F	Collinsia parviflora (a)	-	3	2	-	1	1	.00	.00
F	Cruciferae	2	-	-	2	-	-	-	-
F	Cryptantha spp.	b81	a35	a57	41	17	23	.48	1.06
F	Delphinium nuttallianum	65	52	6	29	25	2	.48	.09
F	Descurainia pinnata (a)	-	b67	a5	-	34	3	.39	.01
F	Erigeron spp.	-	1	3	-	1	2	.00	.01
F	Hymenoxys acaulis	-	2	-	-	1	-	.03	-

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover %	
		'88	'95	'00	'88	'95	'00	'95	'00
F	Ipomopsis aggregata	-	3	-	-	2	-	.01	-
F	Lappula occidentalis (a)	-	$_{b}$8	$_{a}$-	-	6	-	.03	-
F	Leucelene ericoides	$_{b}$10	$_{a}$-	$_{a}$-	4	-	-	-	-
F	Lepidium spp. (a)	-	3	-	-	1	-	.03	-
F	Lesquerella spp.	$_{b}$65	$_{ab}$66	$_{a}$31	33	32	15	.47	.22
F	Linum lewisii	6	5	2	3	2	1	.03	.03
F	Lithospermum spp.	1	-	1	1	-	1	-	.00
F	Lomatium spp.	-	-	3	-	-	1	-	.03
F	Lychnis drummondii	-	2	-	-	1	-	.00	-
F	Machaeranthera canescens	$_{b}$48	$_{a}$15	$_{a}$20	25	7	11	.07	.49
F	Microsteris gracilis (a)	-	1	-	-	1	-	.03	-
F	Oenothera spp.	$_{a}$-	$_{a}$-	$_{b}$9	-	-	4	-	.07
F	Oxytropis sericea	12	2	14	6	2	6	.19	.26
F	Penstemon humilis	$_{b}$66	$_{a}$35	$_{a}$21	30	16	11	.37	.43
F	Physaria acutifolia	$_{a}$-	$_{a}$-	$_{b}$8	-	-	4	-	.07
F	Phlox hoodii	$_{a}$-	$_{c}$24	$_{b}$41	-	11	17	.22	.43
F	Phlox longifolia	$_{c}$46	$_{a}$-	$_{b}$5	22	-	3	-	.01
F	Senecio multilobatus	$_{a}$-	$_{b}$9	$_{b}$8	-	3	4	.04	.05
Total for Annual Forbs		0	101	37	0	54	21	0.53	0.12
Total for Perennial Forbs		508	295	274	250	142	130	2.89	3.88
Total for Forbs		508	396	311	250	196	151	3.43	4.01

Values with different subscript letters are significantly different at % = 0.10

BROWSE TRENDS --
Herd unit 08B, Study no: 8

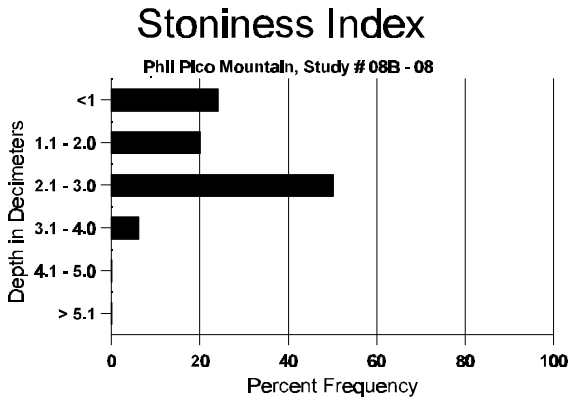
Type	Species	Strip Frequency '95	Strip Frequency '00	Average Cover % '95	Average Cover % '00
B	Amelanchier utahensis	2	2	.01	.03
B	Artemisia frigida	63	62	.91	1.03
B	Artemisia tridentata vaseyana	36	36	1.51	2.73
B	Ceratoides lanata	2	0	-	-
B	Cercocarpus montanus	82	84	18.02	19.50
B	Chrysothamnus viscidiflorus lanceolatus	14	14	.07	.48
B	Eriogonum microthecum	55	40	1.59	1.51
B	Symphoricarpos oreophilus	5	6	.00	.30
B	Tetradymia canescens	1	1	.06	-
Total for Browse		260	245	22.21	25.60

BASIC COVER --
Herd unit 08B, Study no: 8

Cover Type	Nested Frequency '95	Nested Frequency '00	Average Cover % '88	Average Cover % '95	Average Cover % '00
Vegetation	343	346	11.00	39.45	57.22
Rock	338	311	19.25	23.53	19.75
Pavement	274	326	23.25	11.68	30.17
Litter	391	372	38.00	40.21	36.86
Cryptogams	8	13	.25	.02	.11
Bare Ground	160	153	8.25	2.26	4.55

SOIL ANALYSIS DATA --
Herd Unit 8B, Study # 8, Study Name: Phil Pico Mountain

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
12.31	N/A	7.0	69.0	20.1	10.9	3.7	5.2	86.4	1.4



PELLET GROUP FREQUENCY --
Herd unit 08B, Study no: 8

Type	Quadrat Frequency		Pellet Transect	
	'95	'00	Pellet Groups per Acre '00	Days Use per Acre (ha) '00
Rabbit	8	-	9	N/A
Elk	51	26	96	40 (99)
Deer	25	7	522	7 (17)

BROWSE CHARACTERISTICS --
Herd unit 08B, Study no: 8

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Amelanchier utahensis																		
S	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	4	-	-	-	-	-	4	-	-	-	80			4
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	5	-	-	-	-	-	-	-	-	5	-	-	-	100			5
	00	4	-	-	12	-	-	-	-	-	16	-	-	-	320			16
M	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	-	-	1	-	-	-	-	-	-	1	-	-	-	20	16	9	1
	00	-	1	-	-	-	-	-	-	-	1	-	-	-	20	16	12	1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	00%	00%	00%	
'95	00%	17%	00%	+65%
'00	06%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'88	0	Dec:	-
	'95	120		-
	'00	340		-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Artemisia frigida																		
S	88	5	-	-	1	-	-	-	-	-	6	-	-	-	400			6
	95	2	-	-	6	-	-	-	-	-	8	-	-	-	160			8
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	88	75	2	1	14	-	-	6	-	-	98	-	-	-	6533			98
	95	10	-	-	12	-	-	-	-	-	22	-	-	-	440			22
	00	11	-	-	3	-	-	-	-	-	14	-	-	-	280			14
M	88	103	4	3	12	-	-	4	-	-	125	-	1	-	8400	5	4	126
	95	122	-	-	51	-	-	-	-	-	173	-	-	-	3460	9	7	173
	00	143	1	-	6	-	-	7	-	-	157	-	-	-	3140	5	7	157
D	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	1	-	-	-	-	-	-	-	-	-	-	-	1	20			1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	03%	02%	.44%	-74%
'95	00%	00%	00%	-12%
'00	.58%	00%	.58%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'88	14933	Dec:	0%
	'95	3900		0%
	'00	3440		1%

Artemisia nova																		
M	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66	4	7	1
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	00%	00%	00%	
'95	00%	00%	00%	
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'88	66	Dec:	-
	'95	0		-
	'00	0		-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Artemisia tridentata vaseyana																		
S	88	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2
	95	-	-	-	1	-	-	-	-	-	1	-	-	-	20			1
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	88	2	1	-	2	-	-	-	-	-	5	-	-	-	333			5
	95	4	-	-	1	-	-	-	-	-	5	-	-	-	100			5
	00	7	-	-	-	-	-	-	-	-	7	-	-	-	140			7
M	88	11	4	2	-	-	-	-	-	-	17	-	-	-	1133	11	16	17
	95	10	12	4	4	4	-	-	-	-	34	-	-	-	680	11	24	34
	00	26	7	1	3	-	1	-	-	-	38	-	-	-	760	12	22	38
D	88	4	1	2	-	-	-	-	-	-	7	-	-	-	466			7
	95	2	6	1	1	1	-	-	-	-	5	-	-	6	220			11
	00	3	4	1	2	-	-	-	-	-	3	-	-	7	200			10
X	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	160			8
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	80			4

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	21%	14%	00%	-48%
'95	46%	10%	12%	+ 9%
'00	20%	05%	13%	

Total Plants/Acre (excluding Dead & Seedlings)				
'88	1932	Dec:		24%
'95	1000			22%
'00	1100			18%

Ceratoides lanata																		
M	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	1	-	-	1	-	-	-	-	-	2	-	-	-	40	11	13	2
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	00%	00%	00%	
'95	00%	00%	00%	
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
'88	0	Dec:		-
'95	40			-
'00	0			-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Cercocarpus montanus																		
S	88	2	-	-	1	-	-	-	-	-	3	-	-	-	200			3
	95	3	-	-	5	-	-	-	-	-	8	-	-	-	160			8
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	88	5	5	12	1	-	-	-	-	-	21	-	2	-	1533			23
	95	9	5	3	8	3	-	-	-	-	28	-	-	-	560			28
	00	16	2	1	1	-	-	-	-	-	20	-	-	-	400			20
M	88	-	3	25	-	-	-	-	-	-	27	-	1	-	1866	27	24	28
	95	1	1	5	-	44	73	-	-	-	115	-	9	-	2480	29	39	124
	00	8	17	26	10	28	23	-	-	-	104	6	2	-	2240	29	40	112
D	88	1	2	8	-	-	-	-	-	-	11	-	-	-	733			11
	95	-	-	-	1	-	3	-	-	-	4	-	-	-	80			4
	00	2	2	2	-	7	10	1	-	-	15	1	-	8	480			24
X	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	40			2
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	16%	73%	05%	-24%
'95	34%	54%	06%	+ 0%
'00	36%	40%	06%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'88	4132	Dec:	18%
	'95	3120		3%
	'00	3120		15%

Chrysothamnus viscidiflorus lanceolatus																		
M	88	3	-	-	2	-	-	-	-	-	3	-	2	-	333	9	7	5
	95	16	-	-	4	-	-	-	-	-	20	-	-	-	400	10	14	20
	00	17	-	2	3	-	-	-	-	-	22	-	-	-	440	10	16	22

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	00%	00%	40%	+17%
'95	00%	00%	00%	+ 9%
'00	00%	09%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'88	333	Dec:	-
	'95	400		-
	'00	440		-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Eriogonum microthecum																		
S	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	2	-	-	-	-	-	2	-	-	-	40			2
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	88	15	-	-	1	-	-	-	-	-	16	-	-	-	1066			16
	95	2	-	-	1	-	-	-	-	-	3	-	-	-	60			3
	00	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
M	88	53	8	3	2	-	-	-	-	-	66	-	-	-	4400	5	6	66
	95	95	-	-	29	-	-	-	-	-	124	-	-	-	2480	6	12	124
	00	92	-	-	8	-	-	-	-	-	100	-	-	-	2000	5	8	100
D	88	-	1	1	-	-	-	-	-	-	2	-	-	-	133			2
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	2	-	-	-	-	-	-	-	-	1	-	-	1	40			2

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	11%	05%	00%	-55%
'95	00%	00%	00%	-19%
'00	00%	00%	.97%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'88	5599	Dec:	2%
	'95	2540		0%
	'00	2060		2%

Gutierrezia sarothrae																		
M	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0	6	8	0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	00%	00%	00%	
'95	00%	00%	00%	
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'88	0	Dec:	-
	'95	0		-
	'00	0		-

Pediocactus simpsonii																		
Y	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66	3	4	1
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	00%	00%	00%	
'95	00%	00%	00%	
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'88	132	Dec:	-
	'95	0		-
	'00	0		-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Purshia tridentata																		
M	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	4	9	0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	00%	00%	00%	
'95	00%	00%	00%	
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'88	0	Dec:	-
	'95	0		-
	'00	0		-

Symphoricarpos oreophilus																		
S	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	88	5	-	-	-	-	-	-	-	-	5	-	-	-	333			5
	95	5	-	-	-	-	-	-	-	-	5	-	-	-	100			5
	00	4	-	-	-	-	-	-	-	-	4	-	-	-	80			4
M	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66	9	15	1
	95	-	-	-	7	-	-	-	-	-	7	-	-	-	140	9	32	7
	00	10	-	-	-	-	-	1	-	-	11	-	-	-	220	7	19	11

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	00%	00%	00%	-40%
'95	00%	00%	00%	+20%
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'88	399	Dec:	-
	'95	240		-
	'00	300		-

Tetradymia canescens																		
M	88	4	-	-	-	-	-	-	-	-	4	-	-	-	266	6	7	4
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20	8	12	1
	00	2	-	-	-	-	-	-	-	-	2	-	-	-	40	9	12	2

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'88	00%	00%	00%	-92%
'95	00%	00%	00%	+50%
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'88	266	Dec:	-
	'95	20		-
	'00	40		-